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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/540,578	03/31/2000	Hartwig Josef Bernhard Wehrmann	1237	3325

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EXAMINER

MEHTA, ASHWIN D

ART UNIT PAPER NUMBER

1638

DATE MAILED: 03/27/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/540,578

Applicant(s)

WEHRMANN, HARTWIG JOSEF
BERNHARD

Examiner

Ashwin Mehta

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED. (35 U.S.C. § 133)
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 09 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. The rejection to claim 33 under 35 U.S.C. 112, 2nd paragraph, is withdrawn, in light of the claim amendment.
3. The rejections to claims 37-39 and 40-46 under 35 U.S.C. 112, 2nd paragraph, are withdrawn, in light of the claim amendments.

Deposit Of Biological Material

4. Applicant's intent to delay stating the ATCC deposit number, in the paper submitted 09 January 2002, until the receipt of notice of allowable subject matter is noted (response, page 3). The requirement for deposit is maintained.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

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provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-49 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-27 of U.S. Patent No. 6,124,534 ('534). Although the conflicting claims are not identical, they are not patentably distinct from each other because they both appear to be drawn to the same maize seeds, plants, plant parts, and methods. The designation "PH3AV" of the instantly claimed seed is arbitrarily assigned, and does not provide any patentable distinction from the seed claimed in '534, PH1K2, which is also arbitrarily assigned. Any differences between PH3AV and PH1K2 and plants derived from them are due to minor morphological variations that do not confer patentable distinction. It is obvious that the methods for plant breeding programs using PH1K2 as a source would introduce single gene conversions into the plant, and it is obvious that any allele of any gene, including dominant and recessive alleles, may be introduced as a result of the breeding program. Inserting the ATCC accession number into the instant claims will overcome the rejection.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-49 remain rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant

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regards as the invention, for the reasons of record stated in the Office action mailed 05 October 2001 on page 2.

Claims 1-49 are incomplete in the recitation of the limitation "representative seed having been deposited under ATCC accession number ____" as set forth in claims 1, 6, 21, 25, 37, and 40.

Applicants, in the paper submitted 09 January 2002, submit that the pertinent claims will be amended at such time the actual deposit has been made, which will be delayed until notice of allowable claims is provided (paragraph bridging pages 3-4). The rejection is maintained.

7. Claims 19, 20, 35, 48, and 49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 19, 20, 48, and 49 are improperly dependent on their parent claims. The claims are directed to "The single gene conversion(s) of claim 18 (or 47)". However, claims 18 and 47 are directed to maize plants. It is suggested that claims 19, 20, 48, and 49 be amended to be directed to the maize plant of claim 18 or 47, and then further define the nature of the single gene conversions of the plants.

In claim 35: The claim is improperly dependent on claim 34. Claim 35 is directed to the maize plant breeding program of claim 34. However, claim 34 is directed to a method.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

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The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

8. Claims 3-5, 14, 17, 22-24, 33, 36, 41, 43, 45, and 46 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The claims are broadly drawn towards a tissue culture of any regenerable cells from the plant grown from seed of PH3AV; any maize plant or parts thereof wherein at least one ancestor is the plant grown from seed of PH3AV, said maize plant expressing a combination of at least 2 PH3AV traits; a maize plant produced by a method for developing a maize plant in a plant breeding program; a maize plant having all the physiological and morphological characteristics of inbred line PH3AV, wherein said plant is male sterile, and a tissue culture of any regenerable cells of said plant, and any PH3AV-derived maize plant wherein at least one ancestor is a maize plant having all the physiological and morphological characteristics of inbred line PH3AV; any PH3AV-derived maize plant, expressing a combination of at least 2 PH3AV traits.

The specification describes the morphological and physiological characteristics of a maize plant arbitrarily designated PH3AV (specification, page 16, line 3 to page 19, line 50). The specification also describes corn breeding programs that can be used for crop improvement, to derive other corn varieties or breeding lines, to develop new, unique and superior corn varieties; that methods are known in the art to confer male sterility to plants; that tissue culture

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techniques were known in the art (page 1, line 29 to page 7, line 8; page 20, line 2 to page 21, line 27).

However, the specification does not describe the characteristics of the cells of all tissue cultures derived from plant parts of corn variety PH3AV. It is well known that chromosome aberrations can be a side effect of tissue culture techniques, which introduce new characteristics into the tissue culture and in plants regenerated therefrom. The specification does not describe the characteristics of such cultures and plants. It is suggested that claims 4 and 23 be amended to indicate that the regenerable cells of the tissue culture regenerate a plant that expresses all of the morphological and physiological characteristics of corn variety PH3AV.

The specification discusses how plants may be manipulated to be male sterile. However, the morphological and physiological description of plant PH3AV does not indicate that it is male sterile. It is suggested that claim 3 be amended to indicate that the corn plant of claim 2 is further manipulated to be male sterile.

The specification also does not describe the plants that can be produced by the corn breeding programs, or by crosses wherein at least one ancestor is corn variety PH3AV and expresses a combination of any 2 of the traits listed in the claims, or a plant having all of the physiological and morphological characteristics of corn variety PH3AV. The description of PH3AV is not indicative of the description of plants produced by the breeding programs or crosses, as other corn plants, of unknown genotypes and phenotypes, would be crossed with PH3AV and its progeny. The claimed invention encompasses plants that express at least two "PH3AV traits." However, to say that a plant expresses two traits of another plant, or has two traits derived from another plant, is not sufficient information to describe that plant, as numerous

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corn plants express at least two of the same traits as PH3AV. Two plant traits do not provide any description of the other traits. Therefore, to say that a plant expresses two PH3AV traits is not an indication that it was derived from PH3AV, and it is not a sufficient description of that plant.

Further, it is possible that the claimed plants inherited the genes governing those traits from an ancestor other than PH3AV. For example, Kramer (U. S. Patent No. 6,124,534) describes a corn plant, designated "PH1K2," which has at least two traits in common with PH3AV, for example high grain yield, early flowering, and high silage yield (col. 11, lines 1-7). The instantly claimed corn plants could have PH21T as an ancestor, as well as PH3AV in which these three traits, for example, could have been inherited from PH21T. Furtherstill, the claims also encompass plants that do not have to express any of the traits that are expressed by PH3AV. The specification does not describe any of the traits of such plants, and the description of the phenotype of PH3AV is not indicative of the description of such plants. Given the breadth of the claims encompassing corn plant PH3AV having male sterility, corn plants not derived from PH3AV seed, tissue culture capable of regenerating plants expressing any trait, and corn plants expressing any trait, or at least two traits that are also expressed by PH3AV, and lack of guidance as discussed above, the specification fails to provide an adequate written description of the multitude of corn plants and their parts encompassed by the claims.

Claim Rejections - 35 USC § 102 & 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-49 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kramer (U.S. Patent No. 6,124,534).

The claims are broadly drawn towards seed of maize inbred line PH3AV, a plant and its parts grown therefrom; or wherein said plant is transformed; or wherein said plant further comprises one or more single gene conversions; or wherein said plant is male sterile; a tissue culture of any regenerable cells from the plant grown from seed of PH3AV; plants regenerated from said culture; method for producing a first generation hybrid maize seed; any maize plant or parts thereof wherein at least one ancestor is the plant grown from seed of PH3AV, said maize plant expressing a combination of at least 2 PH3AV traits; a maize plant produced by a method

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for developing a maize plant in a plant breeding program; a maize plant having all the physiological and morphological characteristics of inbred line PH3AV, wherein said plant is male sterile, and a tissue culture of any regenerable cells of said plant, and any PH3AV-derived maize plant wherein at least one ancestor is a maize plant having all the physiological and morphological characteristics of inbred line PH3AV; any PH3AV-derived maize plant, expressing a combination of at least 2 PH3AV traits; a method for producing inbred PH3AV; a method for producing a PH3AV-derived plant.

Kramer teaches seed of maize inbred line PH1K2, plants produced by growing said seed, and plants and plant parts having all of the physiological and morphological characteristics of inbred line PH1K2 (col. 10, line 59 to col. 13, line 50; claims). It appears that the claimed plants and seeds of the instant invention may be the same as PH1K2, given that each has red cob color, red anther color, red silk color, high grain yields, early flowering, and high silage yield, for example (Table 1; col. 11, lines 1-7). Alternatively, if the claimed plants, plant parts, and seeds of PH3AV are not identical to PH1K2, then it appears that PH1K2 only differs from the claimed plants, plant parts, and seeds due to minor morphological variation, wherein said minor morphological variation would be expected to occur in different progeny of the same cultivar, and wherein said minor morphological variation would not confer a patentable distinction to PH3AV. Kramer also teaches production of tissue culture of regenerable cells from a plant of line PH1K2, wherein the regenerable cells can be from various plant parts including embryos, pollen, ovules, etc.; a plant produced from tissue culture of PH1K2 having all of the morphological and physiological characteristics of PH1K2; methods for producing F₁ hybrid seeds and plants wherein a plant of inbred line PH1K2 is crossed with itself or another inbred or

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other maize plant, wherein PH1K2 is the male or female parent; maize plant breeding programs including recurrent selection and pedigree breeding, among others, and using the program to improve the an inbred line; production of male sterile forms of maize and male sterile PH1K2; plants produced using PH1K2 as a parent; crossing PH1K2 with other another maize plant, and repeating crosses with the progeny at least four times (col. 1, line 23 to col. 4, line 36; col. 13, line 55 to col. 14, line 52; claims). The plants produced from the maize plant breeding program using PH1K2 as a source plant would considered as comprising single gene conversions. It is obvious that any gene of interest could be introduced, including those that are dominant or recessive alleles of a gene. Kramer also teaches a method for producing inbred PH1K2, comprising planting a collection of seeds comprising seed of a hybrid, one of whose parents is PH1K2, and wherein the collection also comprises seed of PH1K2, growing the plants and selecting the inbred PH1K2 plants based on its decreased vigor, or by their genotype (col. 3, line 40 to col. 4, line 36; claims). Introduction of other genes operably linked to regulatory elements into PH1K2 via genetic engineering or breeding is also taught, as well as crossing the transformed plant with another plant to produce progeny comprising the inherited transgene (col. 14, line 60 to col. 23, line 33). Plants that have inherited the transgene from the transgenic parent would comprise single gene conversions. As cultivar PH1K2 is the same as cultivar PH3AV, the claimed invention was *prima facie* obvious as a whole to one of ordinary skill in the art at the time it was made, if not anticipated by Kramer. Amending claims 1, 6, 21, 25, 37, and 40 to include the ATCC accession number will overcome the rejection for claims 1-13, 15, 16, 18-32, 34, 35, 37-40, 42, 44, and 47-49.

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However, even with the inclusion of the ATCC number, the plants of claims 14, 17, 33, 36, 41, 43, 45, and 46 are still taught by Kramer, as the claims broadly encompass maize plants that can express any trait, or as inbred line PH1K2 has at least two of the traits of PH3AV listed in the claims. The process of making the claimed plants does not distinguish the plants themselves from those taught by the reference. Thus, the claimed invention was clearly *prima facie* obvious as a whole to one of ordinary skill in the art, if not anticipated by Kramer.

10. No claim is allowed.

Contact Information

Any inquiry concerning this earlier communications from the examiner should be directed to Ashwin Mehta, whose telephone number is 703-306-4540. The examiner can normally be reached on Mondays-Thursdays from 8:00 A.M to 5:30 P.M. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amy Nelson, can be reached at 703-306-3218. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 and 703-872-9306 for regular communications and 703-872-9307 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.



March 22, 2002

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